



Helping our members work together to keep the lights on...
today and in the future



EPA's 111(d) Carbon Regulation: A South Dakota Forum

SPP's Perspective

Lanny Nickell

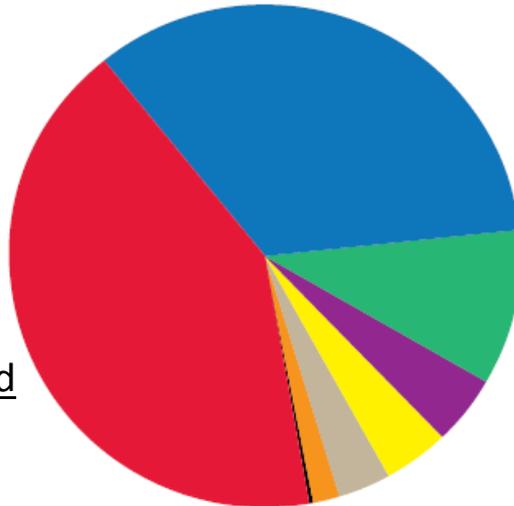
lnickell@spp.org

July 31, 2014



SPP's 2013 Energy Consumption and Capacity

Capacity



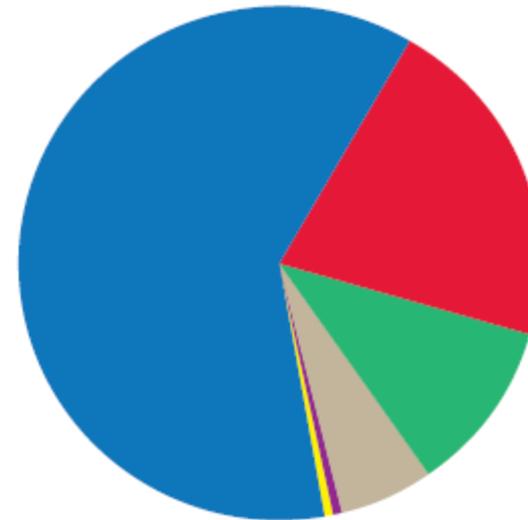
Total Capacity

66 GW

Total Peak Demand

49 GW

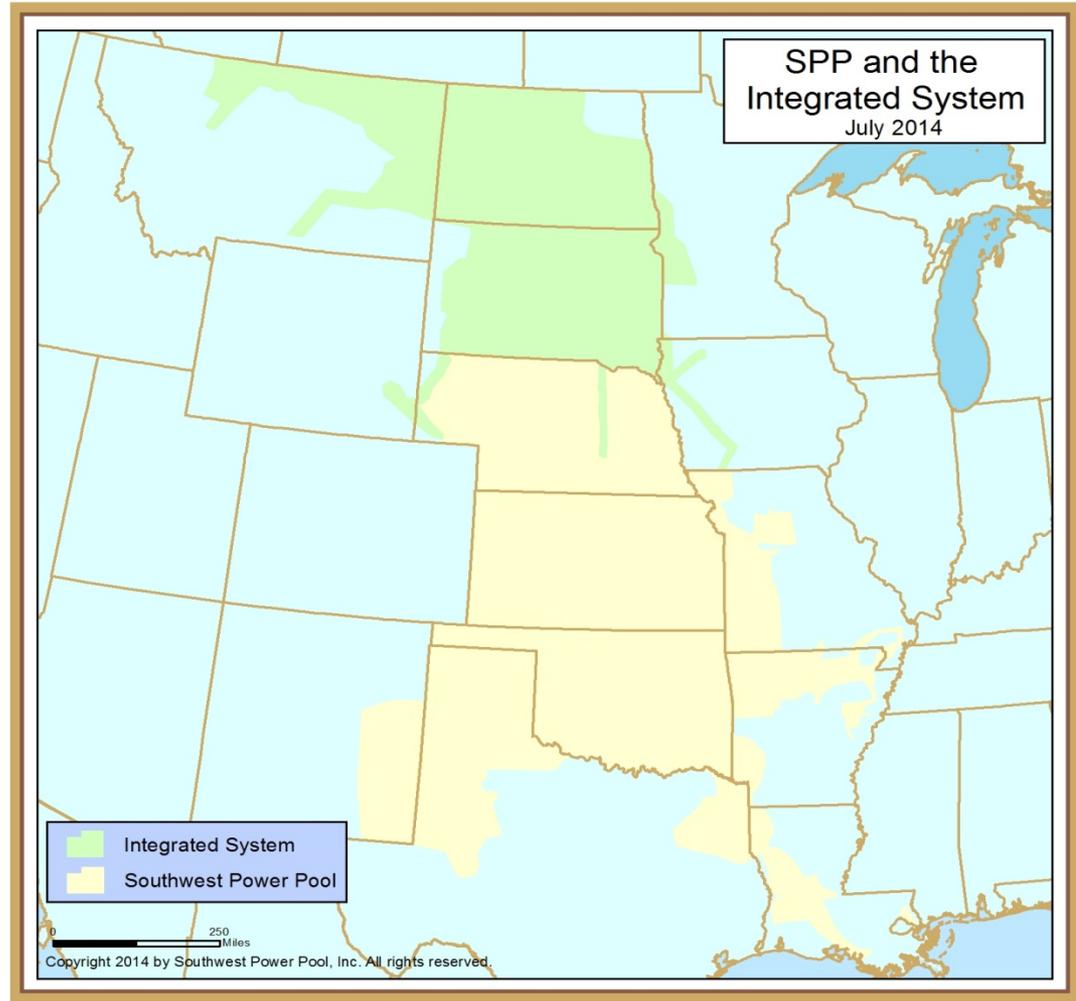
Consumption



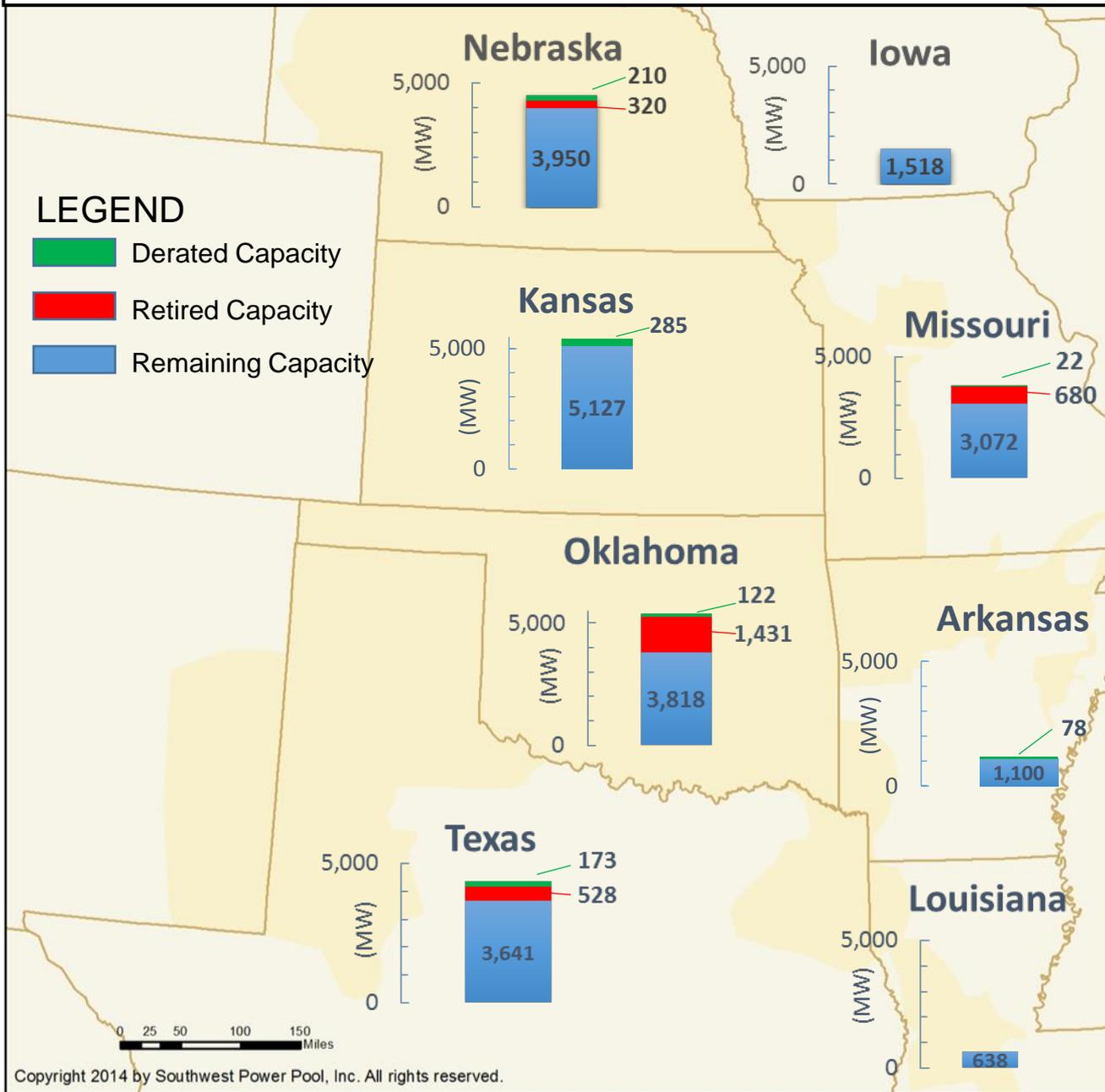
12% annual capacity margin requirement

SPP's Future Expanded Operating Region

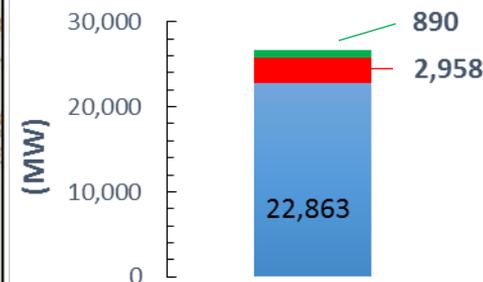
- Adding 3 new members in fall 2015: Western Area Power Administration, Basin Electric Cooperative, and Heartland Consumers Power District
- Adds approximately 5,000 MW of peak demand
- Adds about a 50% increase in SPP's current hydro capacity



SPP's Current Coal Status for 2018

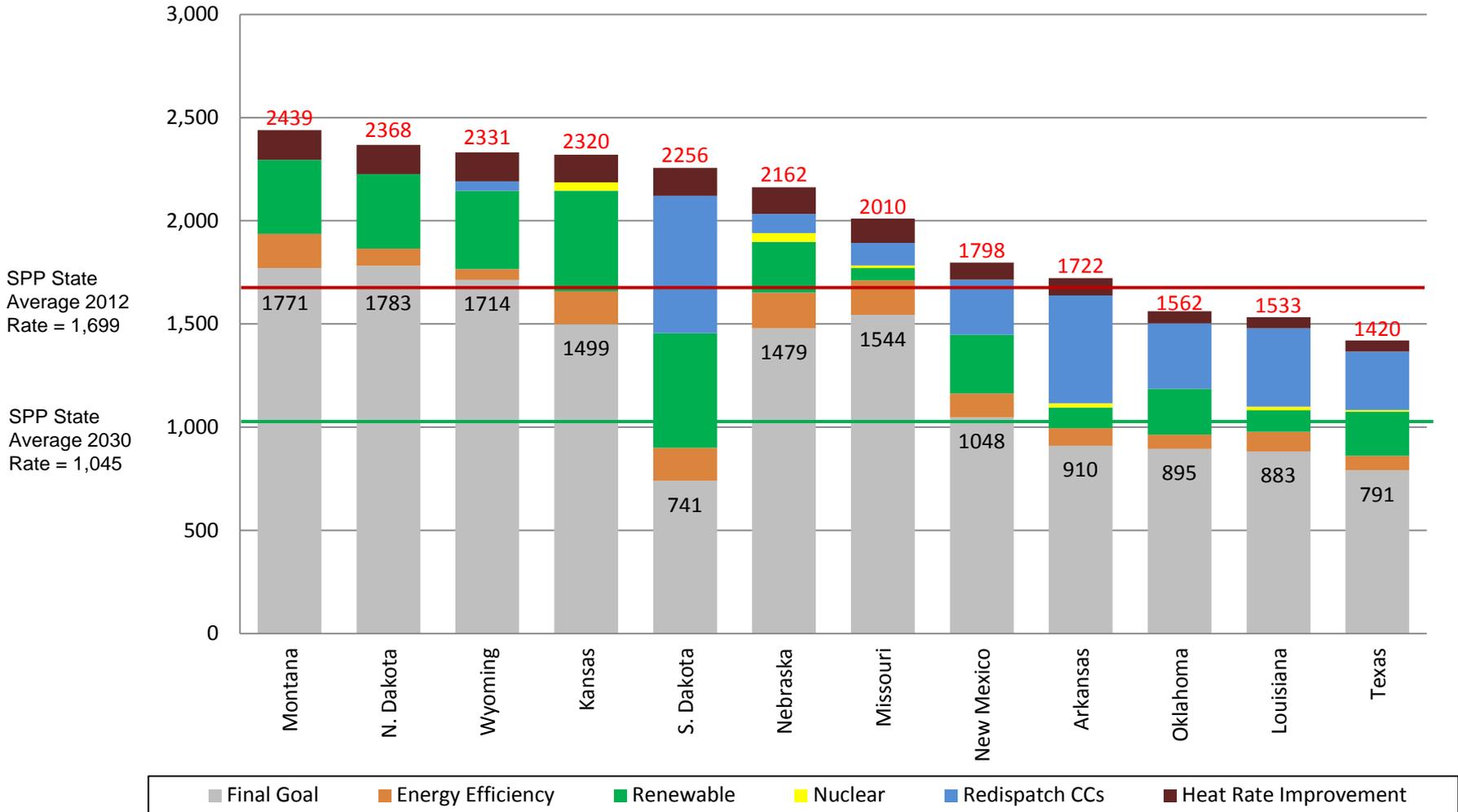


Total Generation and Losses of Coal Units by 2018



2030 Goals for States in SPP

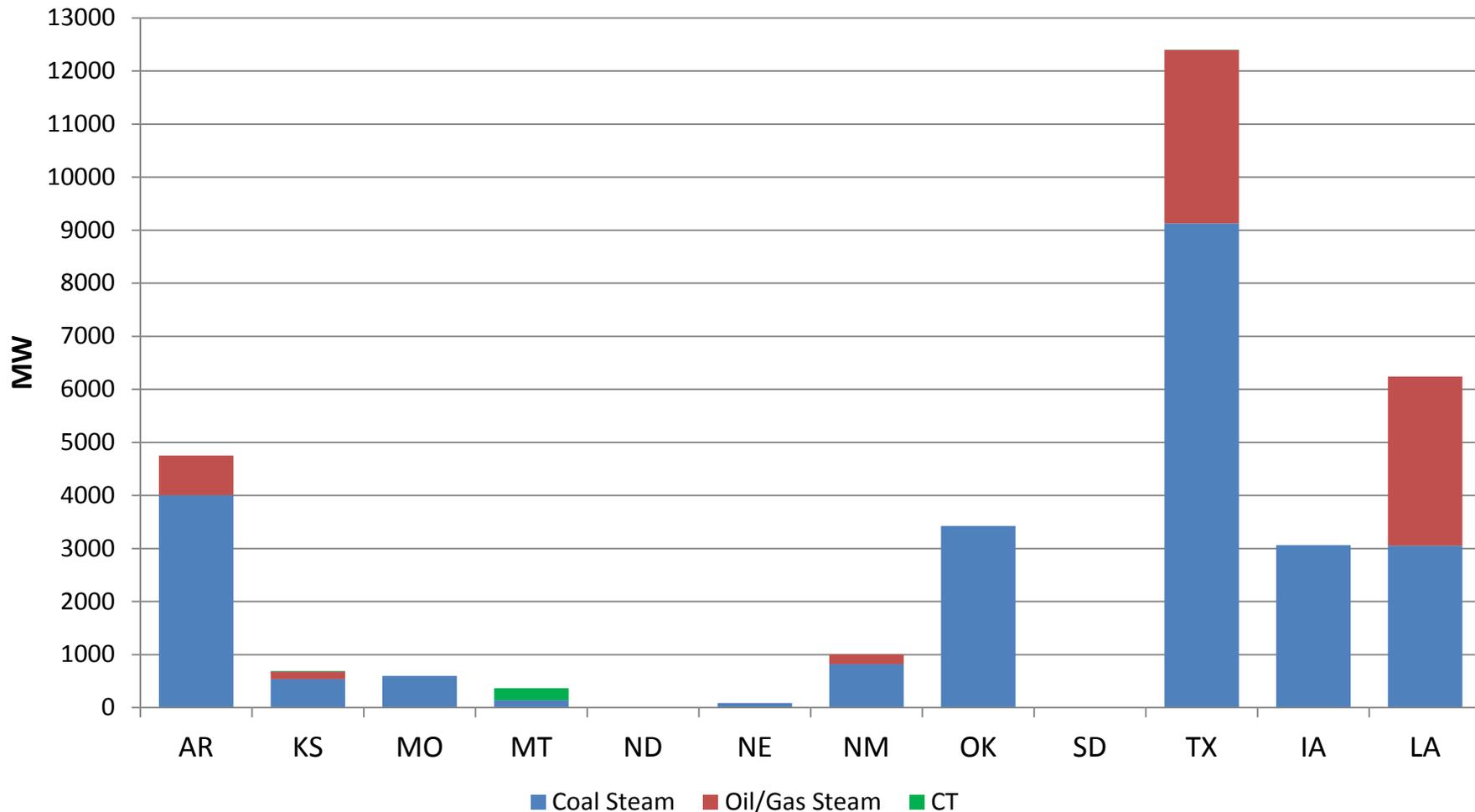
Fossil Unit CO2 Emission Rate Goals and Block Application (lbs/MWh)



*Includes Future States with IS Generation in SPP (N. Dakota, S. Dakota, Montana, and Wyoming)

EPA Projected 2016-2020 EGU Retirements

(For SPP and Select Neighboring States)

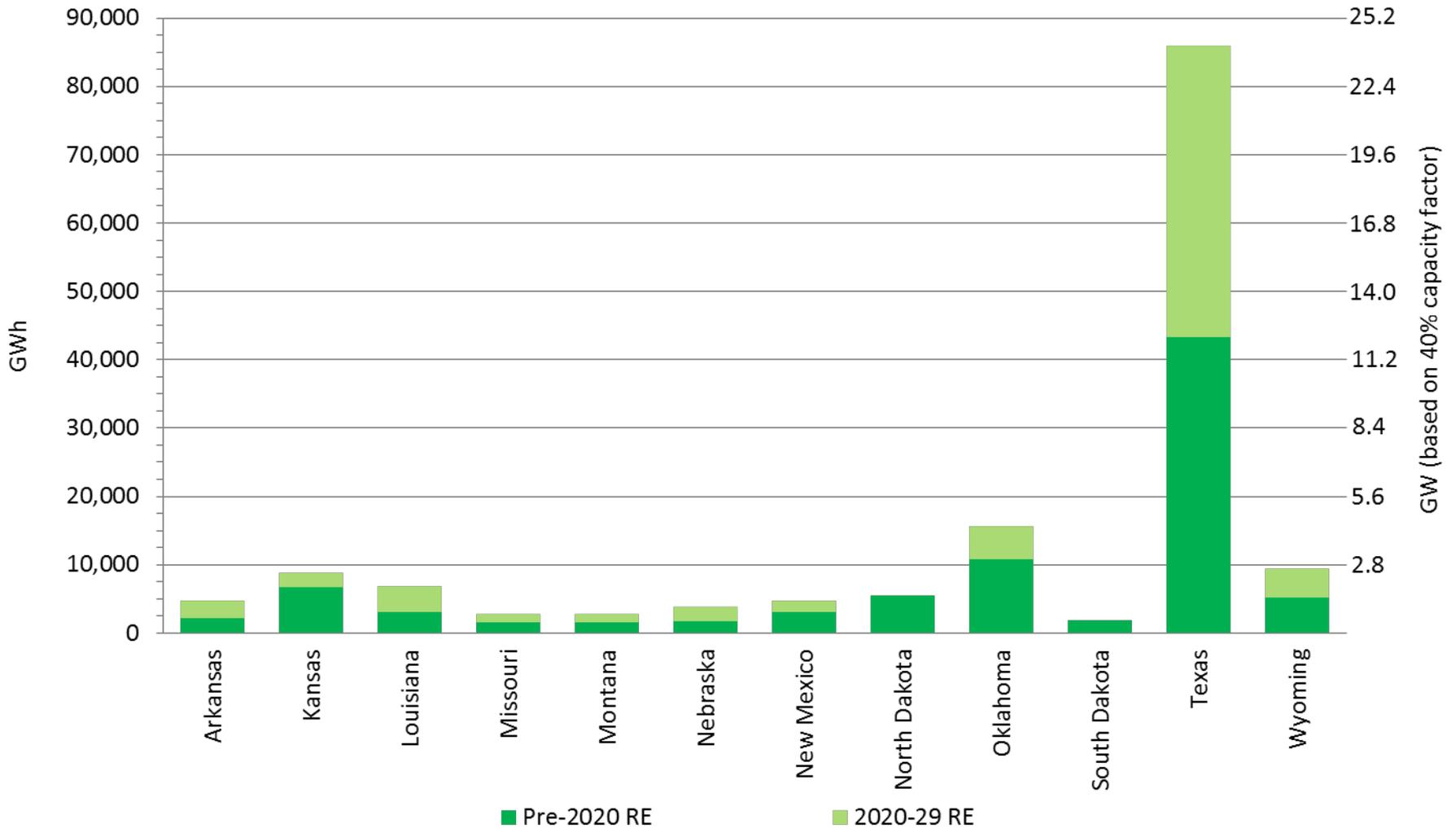


*Excludes committed retirements prior to 2016

**AEP provided data extracted from EPA IPM data

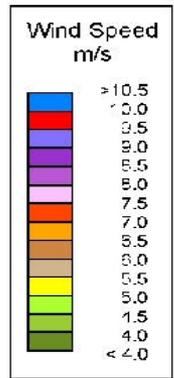
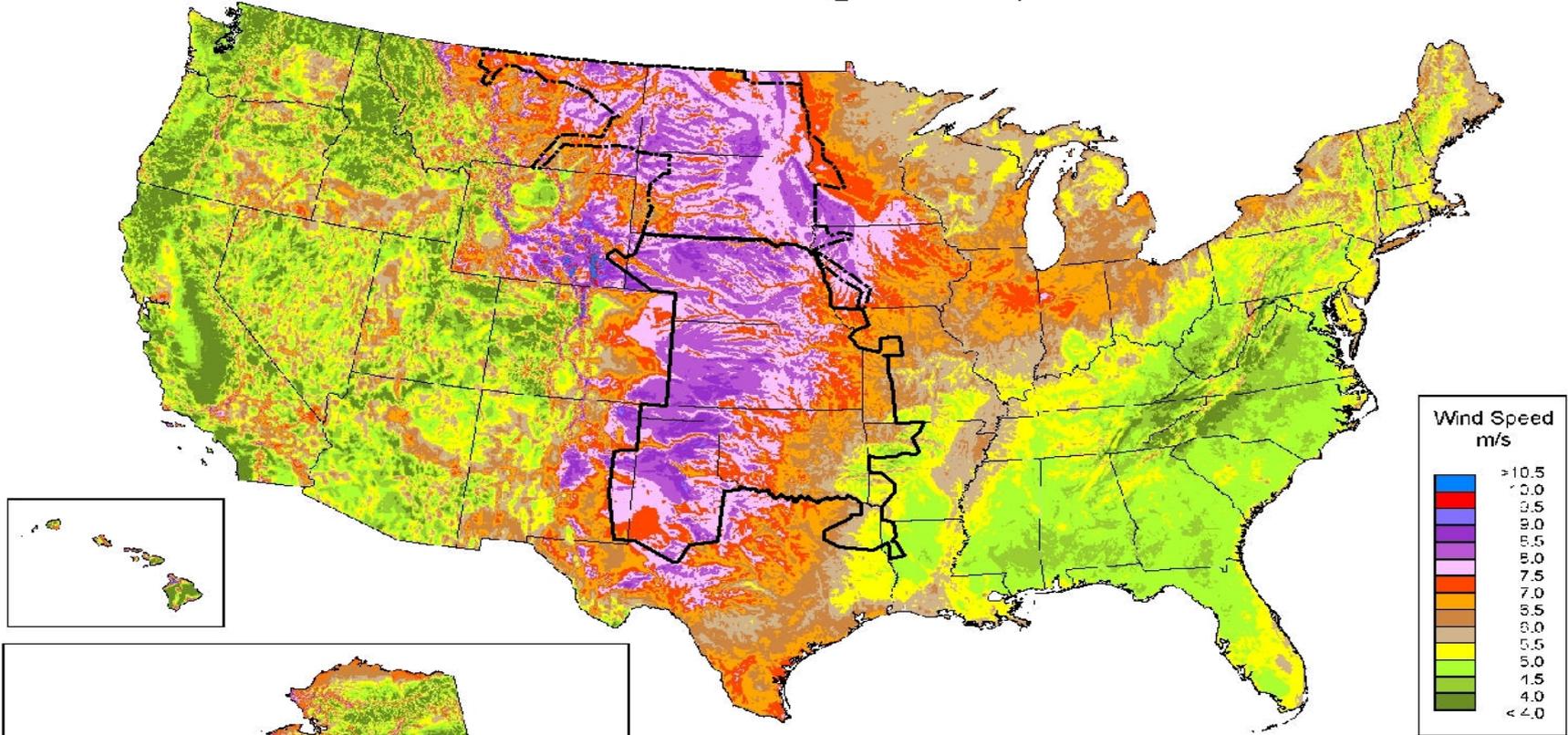
EPA's Renewable Energy Assumptions

(For SPP and Select Neighboring States)



Annual Average Wind Speed - 80 meters

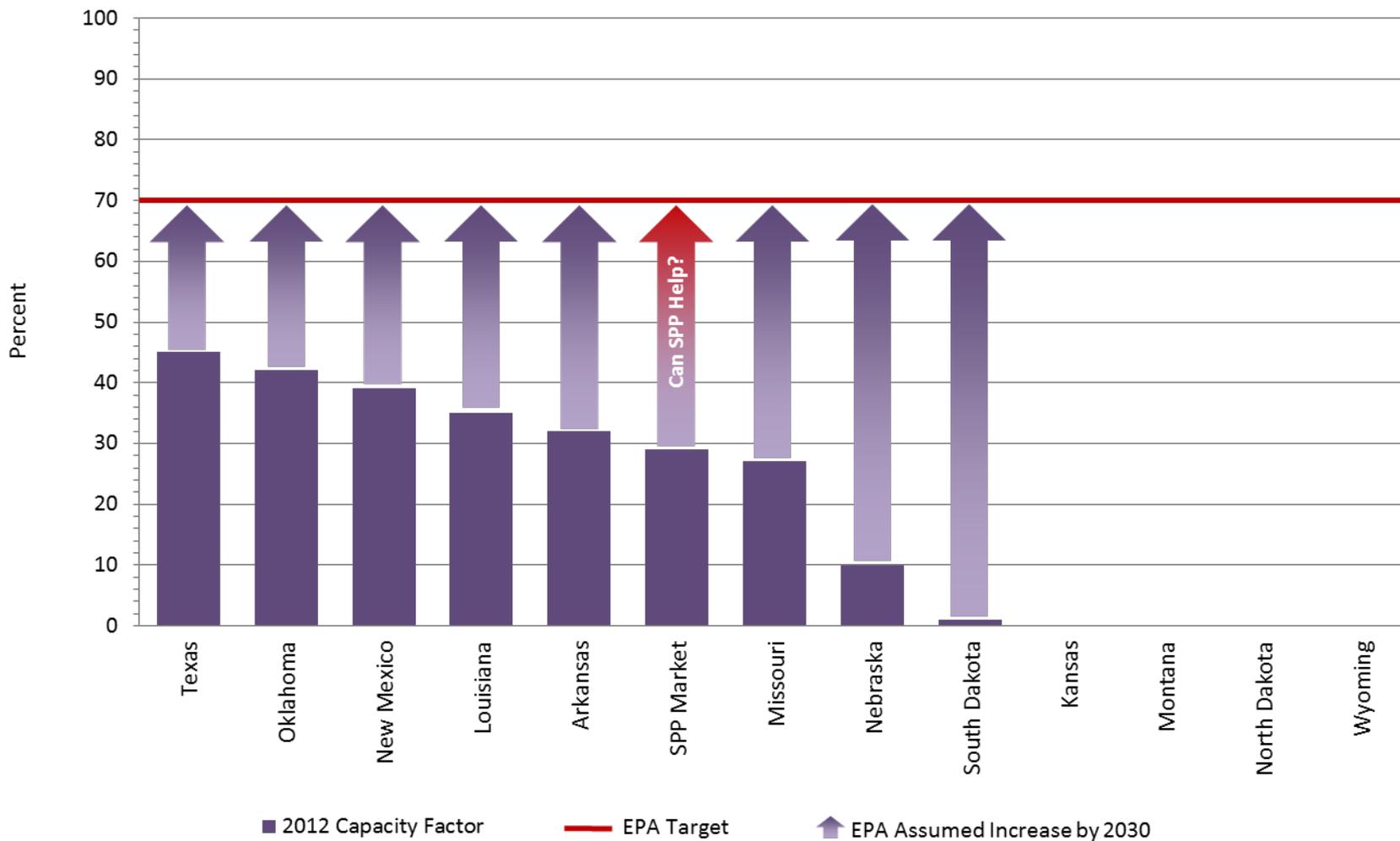
United States - Annual Average Wind Speed at 80 m



Source: Wind resource estimates developed by AWS Truepower, LLC for windNavigator®. Web: <http://www.windnavigator.com> | <http://www.awstruepower.com>. Spatial resolution of wind resource data: 2.5 km. Projection: Albers Equal Area WGS84.

NGCC Capacity Factors

(For SPP and Select Neighboring States)

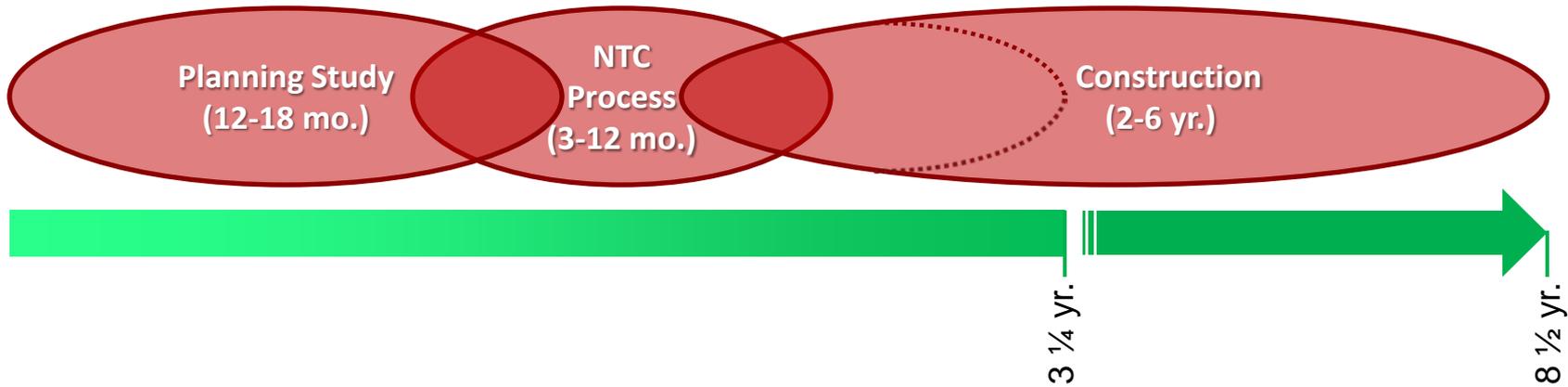


Key Takeaways

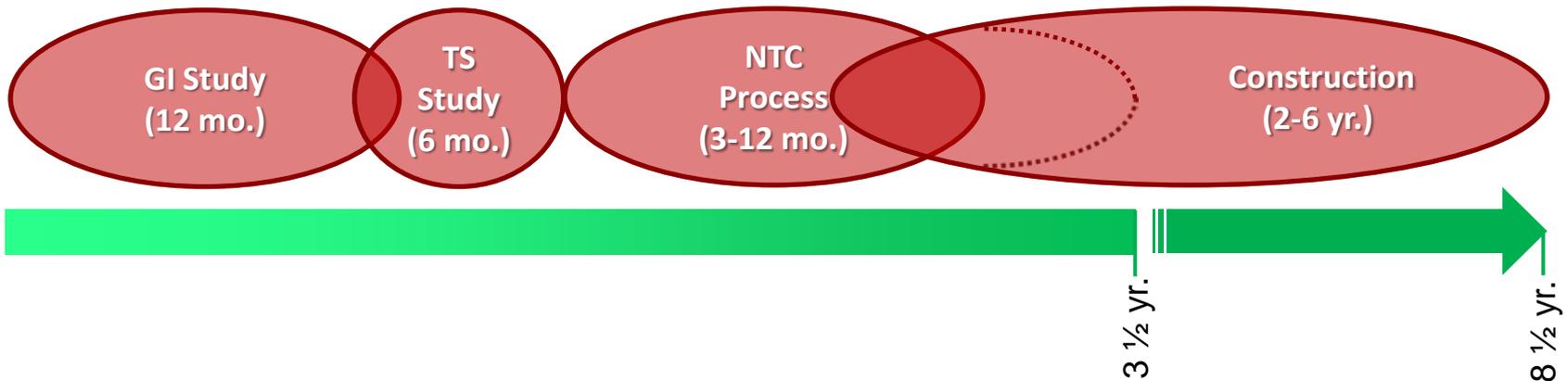
- SPP is responsible to FERC and NERC
 - Required to ensure reliability and perform in accordance with tariff
 - Rules, behavior, pricing, and revenue distribution are subject to FERC approval
 - Penalties may be levied by FERC/NERC for failure to comply (up to \$1 MM/day/violation)
- SPP operates regional security-constrained, economically dispatched markets
 - Considers both reliability and economics
 - Generation dispatch provides reliable and economic solutions to needs over a multi-state area
- SPP plans and directs regional transmission construction
 - Addresses expected reliability, economic, and public policy needs
 - Generator interconnection and transmission service must be requested of SPP and processed by SPP
 - Takes up to 8.5 years to perform applicable planning processes and construct transmission upgrades

Transmission Build Cycle

Transmission Planning Process



GI and Transmission Service Process



Ways That SPP Can Assist

- ✓ Help educate and work with states
- ✓ Perform impact analyses
 - Inform stakeholder responses that are due October 16
 - Inform current planning efforts
 - Assist state and member decision making
- ✓ Submit SPP comments to EPA
- ✓ Evaluate and facilitate regional approach
- ✓ Coordinate with neighbors

SPP's CPP Impact Analyses

- Initial analysis requested by SPP's Strategic Planning Committee
 - Reliability analysis
 - Use existing ITP 2024 models
 - Model EPA's projected EGU retirements
 - Replace retired EGUs with a combination of increased output from existing CCs, new CCs, Energy Efficiency, and increased renewables (with input from member utility experts)
 - Preliminary results expected by first week of August
- SPP's Regional State Committee requested analysis comparing both individual state and regional approaches